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ZEBRA RZ600™ PRINTER SPECIFICATIONS

Specifications are provided for reference and are based on printer tests using Zebra brand ribbons and labels. Results may vary in actual application settings or when using other than recommended Zebra supplies. Zebra recommends always qualifying any application with thorough testing.

Standard Features

- Integrated UHF RFID Reader/Encoder supports EPC Gen2 –(ISO18000-06C)
- RFID processes optimized for fastest label throughput
- RFID ZPL Commands allow ease of RFID set-up with maximum flexibility.
- Program position allows users to place transponders virtually anywhere within a smart label.
- RFID counters keep track of the good and bad labels.
- Variable RFID power settings for both read and write allows maximum flexibility for printing small labels.
- 203 dpi print resolution (8 dots/mm)
- Thin film print head with E3® Element Energy Control
- Thermal transfer and direct thermal printing of bar codes, text, and graphics
- ZPL® or ZPL II® programming language, selectable through software or front panel
- XML Enabled Printing—allows XML communications from today's enterprise systems for barcode label printing.
- 32 bit high speed processor
- On board Real Time Clock (RTC)
- 16MB DRAM memory
- 8MB Flash memory (2 MB User Available)
- USB 2.0, RS-232 Serial and bi-directional parallel ports
- A fixed position reflective sensor and a movable transmissive sensor to support gap, notch and black mark media
- Sleek personality / rugged metal design:
  - ⇒ Die-cast aluminum frame: 0.20" (5mm) thick – ensures parallelism of spindles for consistent print quality
  - ⇒ Metal powder-coated base withstands harsh industrial conditions
  - ⇒ Metal media cover with enlarged clear window: easy to view supplies
  - ⇒ Die-cast print mechanism with head open lock withstands general wear & tear and facilitates media loading.
- Standard LCD control panel: Back-lit, 240 x 128 pixel graphic display w/ full menus to change set-up options in multiple languages (16 languages including Japanese, Chinese & Korean)
- Charcoal gray form design for improved smudge resistance

Optional Features

- Print head: 300 dpi(12 dots/mm)
- Full-width guillotine knife cutter and catch tray, operates under software control cutting labels individually or in strips (not compatible with rewind and peel options)
- A front mount, passive peel option, w/ no take-up spindle
- Rewind – internally rewinds full roll of printed labels on 3" core, or peels & rewinds liner
- Factory Installed 64MB (58MB user available) Flash Memory Option
- Additional scalable and smooth bitmapped fonts available
- Internal or external ZebraNet® 10/100 Print Server option —supports 10Base-T, 100Base-TX, and fast Ethernet 10/100 auto-switching networks, plus complete use of ZebraLink™ Web View and Alert features.
- ZebraNet® Wireless Plus Print Server – provides internally integrated wireless option with support for Motorola® (Symbol) and Cisco® radio cards.
- ZebraNet Internal Wireless Plus print server - Supports advanced wireless securities through integrated, internal, theft-resistant radio card.

ZebraLink Solutions

Software

ZebraDesigner™ Pro – An intuitive, easy-to-use software program for creating complex label designs (option).
ZebraDesigner™ – Offers basic features for simple label design
ZebraDesigner™ for XML – Easy-to-use label design software that enables printing on XML enabled printers.
ZebraDesigner™ Label Design Software for use with the SAP® Business Suite family of business applications
ZebraNet™ Bridge Enterprise – Centrally manage Zebra printers from a single PC screen anywhere on your global network.
ZebraNet™ Utilities v 7.0 – Provides enhanced printing, conversion, and administration capabilities; message management; and more.
Zebra Universal Driver – A printer driver compatible with windows 98SE/NT/2000/XP/2003.
ZebraDesigner Driver – A powerful printer driver compatible with Windows® 98SE/NT/2000/XP/2003 and Windows Vista.
ZBI 2.0™ is an optional, powerful programming language that lets printers run stand-alone applications, connect to peripherals, & much more.
ZBI-Developer™ programming utility makes it dramatically easier for programmers to create and test complex ZBI 2.0 programs and distribute them to the printer.

Firmware

ZPL II – Universal language for Zebra printers. Simplifies label formatting and enables format compatibility with existing systems that run Zebra printers.

- **Web View** –Connect and control Zebra bar code printers via the printer's Web interface using a common Web browser.
- **Alert** – Printers equipped with ZebraNet print servers provide alerts via any email-enabled, wired, or wireless device to minimize downtime.

XML-Enabled printing –direct connect integration for bar code label printing, eliminates license fees and printer server hardware and lowers customization and programming costs. .

Printing Specifications

- 203 dpi resolution (8 dots/mm)
  - Dot size (W x L):
  0.0049" x 0.0049" (0.125mm x 0.125mm)
- 300 dpi resolution (12 dots/mm)
  - Dot size (W x L):
  0.0033" x 0.0039" (0.084mm x 0.099mm)
- First dot location measured from inside media backing edge:
  0.10" ±.04" (2.5mm ± 1mm)
- Maximum print width: 6.6" (168mm)
- Maximum continuous media print length:

203 dpi	300 dpi
102" 2590mm	45" 1143mm

- Media registration tolerance:
  - Vertical = ≤ ±0.039" (±1.0mm) on non-continuous media - --- Horizontal = ≤ ±0.039" (±1.0mm) within a roll
  Programmable print speeds:
  - 203 dpi = 2.4" (61mm), 3" (76mm) through 10" (254mm) per second in 1" increments
  - 300 dpi = 2.4" (61mm), 3" (76mm) through 8" (203mm) per second in 1" increments

Media Specifications

- Maximum non-continuous label length: 39" (991mm)
- Media type: continuous, die-cut, tags, black-mark
- Media web width (label and liner):
  2.0" (51mm) to 7.0" (178mm) Tear / Cutter
  2.0" (51mm) to 6.75" (171mm) Peel / Rewind
- Minimum label length:
  - 0.5" (12.7mm) in Tear, Peel and Rewind Mode
  - 1.0" (25.4mm) in Cutter Mode
- Media thickness (label and liner):
  0.0023" (0.058mm) to 0.010" (0.25mm)
- Maximum media roll size:
  8.0" (203mm) O.D. on a 3" (76mm) I.D. core
- Maximum fan-fold pack size:
  8.0"L (203mm) x 7.0"W (178mm) x 6.2"H (157mm)
- Gap and notch sensing standards:
  - Inter-label gap: 2 - 4mm, preferably 3mm
  - Sensing notch: 0.25"W (6mm) x 0.12"L (3mm)
  - Sensing hole: 0.125" (3mm) diameter
  * Note: Notch & Hole Position centered from 0.15" to 3.5" from media inner edge
- Black mark sensing standards:
  - Black mark length (parallel to inside media edge):
  0.098" - 0.453" (2.5mm - 11.5mm)
  - Black mark width (perpendicular to inside media edge):
  ≥ 0.37" (≥ 9.5mm)
  - Black mark location: within 0.040" (1mm) of inside media edge
  - Black mark density: > 1.0 Optical Density Units (ODU)
  - Maximum media density: 0.5 ODU

Ribbon Specifications

- Ribbon width: 2.00" (51mm) to 6.85" (174mm)
- Standard Lengths: 984' (300m) or 1476' (450m)
- Maximum ribbon roll size:
  3.2" (81.3mm) O.D. on a 1.0" (25.4mm) I.D. core
- Ribbon wound ink-side out.

Standard Printer Fonts

Fonts A, B, C, D, E, F, G, H, and GS are expandable up to 10 times, height and width independently. However, fonts E and H (OCR-A and OCR-B) are not considered “in-spec" when expanded.
The scalable smooth font 0 (CG Triumvirate™ Bold Condensed) is expandable on a dot-by-dot basis, height and width independent, while maintaining smooth edges. Maximum character size depends on available memory.
IBM Code Page 850 international character sets are available in the fonts A, B, C, D, E, F, G, and 0 through software control.
Font Matrices for 8 dot/mm (203 DPI) Print heads

Font	Matrix			Type*	Character Size					
					Inches			Millimeters		
	Height	Width	Inter-character Gap		Height	Width	Char/inch	Height	Width	Char/mm
A	9	5	1	U-L-D	.035	0.020	50.5	0.89	0.50	1.98
B	11	7	2	U	.043	0.030	33.7	1.09	0.76	1.32
C,D	18	10	2	U-L-D	.070	0.040	25.3	1.78	1.01	0.99
E	41	20	6	OCR-B	.160	0.086	11.7	4.06	2.18	0.46
F	26	13	3	U-L-D	.101	0.053	18.9	2.57	1.34	0.74
G	60	40	8	U-L-D	.234	0.158	6.3	5.94	4.03	0.25
H	30	19	9	OCR-A	.177	0.092	10.8	2.97	2.35	0.43
GS	24	24	2	SYMBOL	.094	0.086	11.7	2.38	2.18	0.46
P	20	18	N/A	U-L-D	.078	.059	N/A	1.98	1.51	N/A
Q	28	24	N/A	U-L-D	.109	.079	N/A	2.77	2.02	N/A
R	35	31	N/A	U-L-D	.137	.102	N/A	3.47	2.60	N/A
S	40	35	N/A	U-L-D	.156	.116	N/A	3.96	2.94	N/A
T	48	42	N/A	U-L-D	.187	.139	N/A	4.75	3.53	N/A
U	59	53	N/A	U-L-D	.230	.175	N/A	5.84	4.45	N/A
V	80	71	N/A	U-L-D	.312	.234	N/A	7.92	5.96	N/A
0	Default: 15 x 12			U-L-D	Scalable					
*U = Uppercase, L = Lowercase, D = Descenders										

Font Matrices for 12 dot/mm (300 DPI) Print heads

Font	Matrix			Type*	Character Size					
					Inches			Millimeters		
	Height	Width	Inter-character Gap		Height	Width	Char/inch	Height	Width	Char/mm
A	9	5	1	U-L-D	0.044	0.029	34.0	1.13	0.75	1.33
B	11	7	2	U	0.054	0.044	22.7	1.38	1.13	0.89
C,D	18	10	2	U-L-D	0.088	0.059	17.0	2.25	1.50	0.67
E	28	15	5	OCR-B	0.137	0.098	10.2	3.50	2.50	0.40
F	26	13	3	U-L-D	0.127	0.078	12.8	3.25	2.00	0.50
G	60	40	8	U-L-D	0.294	0.235	4.3	7.50	6.00	0.17
H	21	13	6	OCR-A	0.103	0.093	10.7	2.63	2.38	0.42
GS	24	24	2	SYMBOL	0.118	0.127	7.8	3.00	3.25	0.31
P	20	18	N/A	U-L-D	.098	.088	N/A	2.50	2.25	N/A
Q	28	24	N/A	U-L-D	.137	.118	N/A	3.50	3.00	N/A
R	35	31	N/A	U-L-D	.172	.152	N/A	4.38	3.88	N/A
S	40	35	N/A	U-L-D	.196	.172	N/A	5.00	4.38	N/A
T	48	42	N/A	U-L-D	.235	.206	N/A	6.00	5.25	N/A
U	59	53	N/A	U-L-D	.289	.260	N/A	7.38	6.63	N/A
V	80	71	N/A	U-L-D	.392	.348	N/A	10.00	8.88	N/A
0	Default: 15 x 12			U-L-D	Scalable					
*U = Uppercase, L = Lowercase, D = Descenders										

Bar Code Symbologies & Specifications

- Bar code modulus "X" dimension:
  - Picket fence (non-rotated) orientation:
    - 203 dpi = 4.9 mil to 49 mil
    - 300 dpi = 3.3 mil to 33 mil
  - Ladder (rotated) orientation:
    - 203 dpi = 4.9 mil to 49 mil
    - 300 dpi = 3.9 mil to 39 mil
- Bar code ratios – 2:1 to 3:1 in supported symbologies
- Aztec
- Codabar (supports ratios of 2:1 to 3:1)
- CODABLOCK
- Code 11
- Code 16k
- Code 39 (supports ratios of 2:1 to 3:1)
- Code 49 (2-D)
- Code 93
- Code 128 (subsets A, B, C, and UCC case C codes)
- Data Matrix
- EAN-8, EAN-13, EAN extensions
- Interleaved 2 of 5 (supports ratios 2:1 to 3:1, modulous10 check digit)
- Planet Code
- Logmars
- MaxiCode (2-D)
- PDF417 & Micro-PDF (2-D)
- Plessy
- Postnet
- QR-Code
- MSI
- Standard 2 of 5
- Industrial 2 of 5
- UPC-A, UPC-E, UPC extensions
- RSS
- TLC 39

Zebra Programming Language®
(ZPL® and ZPL II®)

- Communicates in printable ASCII characters
- Compatible with mainframe, mini, and PC hosts
- Downloadable objects include graphics, scalable and bitmap fonts, label templates and formats
- Data compression
- Automatic memory allocation for format while printing
- Automatic serialization of fields
- Format inversion (white on black)
- Mirror-image printing
- Four position field rotation (0º, 90º, 180º, 270º)
- Slew command
- Programmable label quantities with print, pause, cut control
- Status messages to host upon request
- Unicode™-compliant
  - Supports UTF-8 and UTF-16
  - Natively supports bidirectional and complex scripts
  - Support for OpenType Glyph Substitution

Communications Specifications

- USB 2.0
- IEEE 1284 Bi-directional parallel interface
- High-speed serial interfaces
  - RS-232C, with DB9F connector
  - Configurable baud rate (300 – 115,200kB), parity, and data bits. Stop bits at 1 or 2.
  - Software (XON/XOFF), hardware (DTR/DSR, or RTS/CTS) communication handshake protocols
  - RS422/485 with optional adapter.
- ZebraNet® Wireless Plus Print Server – 802.11b/g - compliant wireless print server
- ZebraNet® Internal Wireless Plus Print Server – 802.11b/g - compliant wireless print server
- ZebraNet® 10/100 Print Server - Ethernet network print server (10BASE-T, 100BASE-TX)

Electrical Specifications

- Auto-detectable 90-265VAC, 48-62 Hz, 5A fused power supply
- Agency approvals: FCC subpart B & C, IC RSS 210, IEC 60950-1, EN 300 220, EN 55022 Class B, EN55024, EN 61000-3-2, EN 61000-3-3.
- Product Markings: cTUVus, CE, FCC-B, ICES-003, C-Tick

Physical Specifications

- **Height:** 13.3" (338mm)
- **Width:** 13.4" (341mm)
- **Depth:** 18.7" (475mm)
- **Weight:** 34.7lbs. (16kg)
- **Shipping Weight:** 54 lbs (24.5kg)

Environmental Specifications

- Operating environment:
  Thermal Transfer = 40º to 104ºF (5º to 40ºC)
  Direct Thermal = 32º to 104ºF (0º to 40ºC)
  20% to 85% non-condensing R.H.
- Storage/Transportation environment:
  -40º to 140ºF (-40º to 60ºC)
  5% to 85% non-condensing R.H.

Preventative Maintenance

Zebra recommends cleaning the printer on a regular basis using standard Zebra printer parts and cleaning supplies. Consult your *User's Guide* for further details.

- **Cleaning:**
  The exterior is cleaned with a lint-free cloth, and if necessary, a mild detergent solution or desktop cleaner. Interior components (print head, platen roller, media sensor, peel bar, ribbon and media paths) are cleaned with alcohol or blown air to remove any particles.
- **Lubrication:**
  All mechanical parts are self-lubricating and do not require additional lubrication.
- **Print Registration:**
  Media registration and minimum label length are affected by media type and width, ribbon type and print speed. Performance improves as these factors are optimized. Zebra recommends always qualifying any application with thorough testing.
- **Print Head Replacement:**
  For optimal printing quality and proper printer performance across our product line, Zebra strongly recommends the use of genuine Zebra™ supplies as part of the total solution. Specifically, the RZ400 and RZ600 printers are designed to work only with genuine Zebra™ printheads, thus maximizing safety and print quality.